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# I Cloned a Gene with the Vector Team

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# I CLONED A GENE WITH THE VECTOR TEAM

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There were no elephants with two trunks, no corn plants with four ears and no humans turned into Frankensteins, but there was evidence of recombinant DNA, transformation and cloned organisms. During the first week in August, 26 high school instructors from across the state and two college instructors received training in the laboratory skills of recombinant DNA at Drake University. The course, "A First Laboratory Course in Recombinant DNA Technology," was presented by David Micklos, the program director for the DNA Literacy Program at Cold Spring Harbor Laboratory in Cold Spring Harbor, New York, and sponsored by Pioneer Hi-Bred International of Johnston, Iowa.

In 1984, Cold Spring Harbor, in cooperation with 19 New York school districts, developed a course to provide lab-based technology on molecular biology for advanced high school and beginning college students. The resulting curriculum was presented in the five-day workshop to help instructors introduce the lab-teaching program into their own schools. The main goals of the workshop were to train educators for laboratory-based teachings in DNA science, to invigorate and re-enthuse biology teaching through updating knowledge about new developments in DNA science, and to encourage incorporation of new ideas into classroom teaching.

The workshop centered around nine experiments, featuring the formation of a recombinant plasmid molecule, the creation of a competent cell (capable of receiving material through the cell wall), the transformation of a plasmid into a competent bacterial cell and the analysis of the recombinant molecule. A key aspect of the workshop was the lectures that related the historical aspects to the current developments. Many of the experiments were performed with the same protocal as the classical experiments in the field of molecular biology.

The participants produced a competent cell capable of accepting a plasmid, created a recombinant plasmid, produced, not one, but two different types of transormed cells, and cloned their transformed cells. In addition, they received instruction regarding the introduction of the program into the classroom.

The program, Recombinant DNA for Beginners, utilizes the *Vector* Mobile DNA Laboratory, a specially designed van that was purchased and equipped by Cold Spring Harbor laboratory through a grant from Citicorp/Citibank. The *Vector* van carries the equipment needed for 36 persons to perform the above mentioned experiments, including micropipets to accurately measure one-millionth of a liter, high-speed centrifuges to isolate DNA from bacterial cells, electrophoresis apparatuses to sort DNA molecules by size, a spectrophotometer to measure the growth rate of bacteria and ultraviolet light sources to visualize and photograph DNA. Any classroom equipped with electrical outlets and bunsen burners is readily transformed into a DNA laboratory using *Vector*.

Cold Spring Harbor Laboratory is currently expanding its educational program. Plans are to increase the number of Mobile *Vector* Vans to allow instruction

of recombinant DNA in more areas of the country. If you would like to know the location of future workshops or would like additional information on recombinant DNA, contact David Micklos, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY 11724, phone (516) 367-8455.

A laboratory manual for the recombinant DNA experiment is available from Carolina Biological Supply. For more information, write Carolina Biological Supply Company, Burlington, NC 27215.

## SCIENCE NOTES

### University of Rochester to Hold Biotechnology Institute

The School of Medicine and Dentistry at the University of Rochester (New York) will offer eight different courses during its summer Biotechnology Institute. Designed to introduce pre-college educators to the field of biotechnology, the institute consists of a series of intensive, one-week graduate courses taught by university faculty. Foci of the studies include social and ethical issues in biotechnology, laboratory training, bringing biotechnology to the secondary classroom and employing special models to present biology as an investigative, problem-solving discipline.

Course offerings include Bioethics (July 11-15), Microbial Genetics (July 11-15), Biotechnology (July 18-22), Human Genetics (July 18-22), Immunology (July 25-29), Molecular Neurobiology-Substances of Abuse (July 25-29), Infectious Diseases (August 1-5) and Molecular Environmental Biology (August 1-5).

Each one-week course confers two graduate credit hours. An optional third credit is available in each course for the completion of an extra-class project.

Unit cost per hour will be approximately $200 and some National Science Foundation support is pending. In the past, the foundation has granted scholarships to cover tuition fees and pay a small stipend to participants living more than 50 miles from Rochester (to help defray travel expenses as well as room and board). Housing in university dormitories will be available to all participants, and fees will run approximately $110 per week.

Registration forms and further information may be obtained by writing to Biotechnology Office, Box 672, University of Rochester School of Medicine and Dentistry, Rochester, NY 14642. The registration deadline is April 1, 1988.

### AAAS Releases New Edition of *Resource Directory*

The AAAS has published the second edition of its *Resource Directory*. Listed is detailed information about 950 disabled scientists, engineers, students and others who are occupied in science/technology related positions. These people are resources for promoting science careers and sensitivity to science for disabled people and those who work with or teach them. The directory, which is also available in Braille, contains four separate indices: Geographic Location, Nature of Disability, Scientific Specialty and Women.

To order the directory, send a check or money order for $13 (payable to AAAS) to Project on Science, Technology and Disability, AAAS, 1333 H Street, N.W., Washington, D.C. 20005.